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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,496	10/24/2002	Patrick Joseph Philips	201-0789	9075
22844	7590	10/03/2003	EXAMINER	
FORD GLOBAL TECHNOLOGIES, LLC. SUITE 600 - PARKLANE TOWERS EAST ONE PARKLANE BLVD. DEARBORN, MI 48126			CORRIGAN, JAIME W	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/065,496

Applicant(s)

PHILIPS, PATRICK JOSEPH

Examiner

Jaime W Corrigan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreuter et al. (PN 5,592,906) in view of Yoshioka (PN 5,713,317).

Kreuter discloses the engine having at least one cylinder (See Figure 1, Column 8 Lines 28-37) and at least one inlet (See Figure 1 (6)), valve and at least one exhaust (See Figure 16 (56)) valve per cylinder, the engine also having a first (See Figure 1 (1)) camshaft for controlling the opening of the inlet valve and a second (See Figure 1 (2)) camshaft for controlling the closing of the inlet valve; said first (See Figure 1 (1)) and second (See Figure 1 (2)) camshafts are parallel to and adjacent to each other.

Kreuter fails to disclose adjusting closing time of the inlet valve based on an engine speed wherein said adjustment is effected by a camshaft phaser coupled to the second camshaft; first and second drives are arranged at opposite ends of said parallel camshafts; an engine timing unit coupled to said camshaft phasing mechanism; inlet valve and phasing mechanism are controlled by the same engine timing unit; the first camshaft controls opening and closing times of the exhaust valve; a third camshaft for

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the exhaust valve, said third camshaft controlling an opening and closing time of the exhaust valve.

Yoshioka teaches that it is conventional in the art to utilize adjusting closing time of the inlet valve based on an engine speed (See Figure 3, Column 3 Lines 27-30) wherein said adjustment is effected by a camshaft phaser (See Figure 1 (92)) coupled to the second camshaft (See Column 5 Lines 10-20); a first drive (See Figure 1 (89)) coupled to said first camshaft; and a second drive (See Figure 1 (90)) coupled to said second camshaft wherein said first and second drives are arranged at opposite ends of said parallel camshafts (See Column 4 Lines 59-67, Column 5 Lines 1-9); an engine timing (See Figure 1 (55), (70), Column 6 Lines 6-15) unit coupled to said camshaft phasing mechanism; closing time of said inlet valve is controlled by said engine timing unit controlling said camshaft phasing mechanism (See Figures 1, 4, Figure 1 (55), (70), Column 6 Lines 6-15); the first camshaft (See Figure 1 (86)) controls opening and closing times of the exhaust valve; a third camshaft (See Figure 1 (86)) for the exhaust valve, said third camshaft controlling (See Column 4 Lines 59-67, Column 5 Lines 1-9) an opening and closing time of the exhaust valve.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized adjusting closing time of the inlet valve based on an engine speed by a camshaft phaser taught by Yoshioka in the Kreuter device since it would improve engine output, fuel efficiency and exhaust purifying.

Claims 8, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreuter in view of Yoshioka as applied to claims 1, 13 above, and further in view of Kimura (PN 5,692,464).

Kreuter the invention as recited in claims 1, 13 above, however, fails to disclose said closing time of said inlet valve is adjusted based on an engine torque.

Kimura teaches that it is conventional in the art to utilize said closing time of said inlet valve is adjusted based on an engine torque (See Figure 3, Column 4 Lines 22-26).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized adjusting the closing time of the inlet valve based on engine torque taught by Kimura device since it would lower the compression ratio.

Claims 2, 9-10, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreuter in view of Yoshioka as applied to claims 1, 13 above, and further in view of Tacquet (PN 5,970,929).

Kreuter discloses the invention as recited in claims 1, 13 above, however, fails to disclose delaying the closing time of said inlet valve up to 60 crank angle degrees; a turbocharger and adjusting the closing time of the inlet valve based on a charging pressure of said turbocharger.

Tacquet teaches that it is conventional in the art to utilize delaying the closing time of said inlet valve up to 60 crank angle degrees (See Figures 1-2, Column 3 Lines

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21-25); the engine has a turbocharger (See Column 3 Lines 13-14) coupled thereto, the method further comprising adjusting (See Column 3 Lines 8-25) closing time of the inlet valve based on a charging pressure of said turbocharger.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized adjusting closing time of the inlet valve based on a charging pressure of said turbocharger taught by Tacquet in the Kreuter device since it would reduce the compression ratio and compression stroke.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Durham (PN 3,610,218), Murata et al. (PN 5,992,361), Benllock Martinez (PN 6,135,076) discloses similar variable valve timing systems.

Any inquiry concerning this communication from the examiner should be directed to Examiner Jaime Corrigan whose telephone number is (703) 308-2639. The examiner can normally be reached on Monday - Friday from 8:30 a.m. – 6:00 p.m. 2<sup>nd</sup> Friday off.

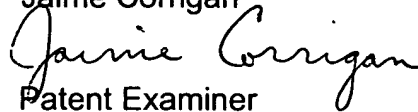
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (703) 308-2623. The fax number for this group is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

JC

Jaime Corrigan



Patent Examiner

September 25, 2003

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THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700